

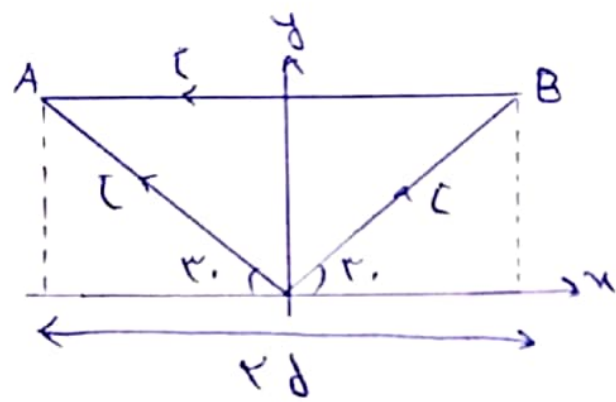
$$B = 1.1 \text{ T} \quad v = 1.0 \times 10^6 \text{ m/s} \quad \left| \frac{m_e}{c} \right| = 9.1 \times 10^{-31} \text{ kg}$$

$$r = \frac{m v \sin \psi_0}{e B} = \frac{9.1 \times 10^{-31} \times 1.0 \times 10^6 \times \sin \psi_0}{1.6 \times 10^{-19} \times 1.1} = 4.7 \times 10^{-8} \text{ m}$$

$$T = 2\pi \frac{m}{e B} = 2\pi \times \frac{9.1 \times 10^{-31}}{1.6 \times 10^{-19} \times 1.1} = 3.3 \times 10^{-10} \text{ s}$$

$$P = v \times \cos \psi_0 \times T = 1.0 \times 10^6 \times \cos \psi_0 \times 3.3 \times 10^{-10} = 3.3 \times 10^{-4} \text{ m}$$

$$\vec{B} = y\hat{i} + x\hat{j}$$



$$d\vec{l} = dx\hat{i} + dy\hat{j} \rightarrow d\vec{F} = [d\vec{l} \times \vec{B}] = l \begin{vmatrix} \hat{i} & \hat{j} & \vec{u} \\ dx & dy & 0 \\ y & x & 0 \end{vmatrix} = (l(x dy - y dx)) \vec{u}$$

$$\vec{F}_{DB} = l \left( \int_0^a x dx - \int_0^{a \tan r_0} y dy \right) \vec{u} = l \left( \frac{a^2}{2} - \frac{a^2}{2} \right) \vec{u} = \frac{a^2}{2} \vec{u}$$

$$\vec{F}_{BA} = l \left( \int_{\tan r_0}^{-a} x dx - \int_{\frac{\sqrt{r_0}}{r} a}^{\frac{\sqrt{r_0}}{r} a} y dy \right) \vec{u} = 0$$

$$\vec{F}_{AD} = l \left( \int_{-a}^0 x dx - \int_{\frac{\sqrt{r_0}}{r} a}^0 y dy \right) \vec{u} = l \left( -\frac{a^2}{2} + \frac{a^2}{2} \right) \vec{u} = -\frac{a^2}{2} \vec{u}$$

$$\vec{F}_T = \vec{F}_{DB} + \vec{F}_{BA} + \vec{F}_{AD} = 0$$

$$A = V_d \times 10^{-12} \text{ m}^{-12}$$

$$L = 10^{-12} \text{ m}$$

$$C = 10^{-12} \text{ A}$$

$$V = 10^{-12} \text{ m} \times 10^{-12} \text{ m}^{-12}$$

$$B = 1$$

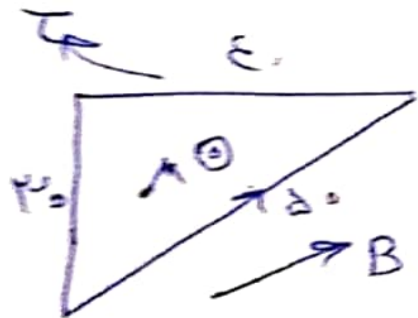
$$n = \frac{iB}{eV_L}$$

$$B = \frac{n e V_L}{i}$$

$$B = \frac{V_d \times 10^{-12} \times 10^{-12} \times 10^{-12} \times 10^{-12} \times 10^{-12} \times 10^{-12}}{10^{-12}}$$

$$= 10^{-12} \times 10^{-12}$$

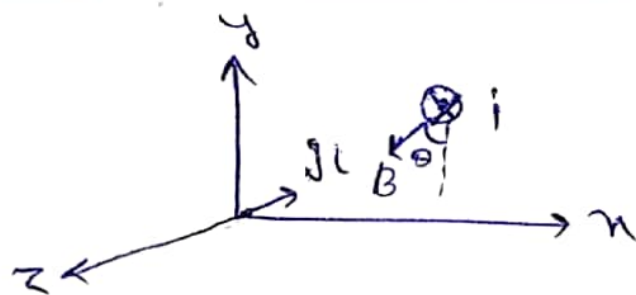
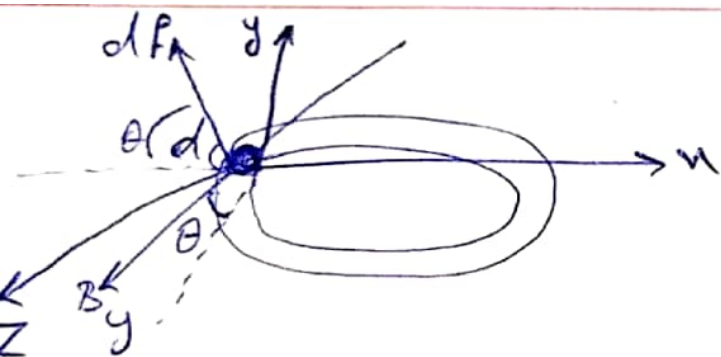
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$$\mu = N i A = l \times b \times \frac{\mu_0 N i}{r} \times \epsilon$$

$$\tau = \mu B \sin \theta = \mu_0 N i l b \sin \theta$$

1



$$mg = F_B$$

$$\vec{dF}_B = i d\vec{L} \times \vec{B}_{xy} \rightarrow |dF_B| = i |dL| |B|$$

$$|dF_y| = |dF_B \sin \theta| = i |dL| |B| \sin \theta$$

$$F_{By} = i |B| \sin \theta \int_0^{r \Omega} dL = i B r \Omega \sin \theta = mg$$

$$B = \frac{mg}{r \Omega i \sin \theta}$$